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*Agriculture in the
New Central Europe*

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Agricultural Outlook

Central Europe: Agriculture in the New Market Economies

Part I - *The Vanguard Countries*

Part II - *The Balkan States*

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Special Article



Central Europe: Agriculture in the New Market Economies

Part I: The Vanguard Countries

The changes taking place in the Central and East European countries (CEE's) are remarkable not only for their scope, but also because few guideposts exist on transforming an economy managed by planners into one driven by markets. In a two-part series, AO looks at the transition to market-oriented agriculture in the seven countries that make up the region—their problems, challenges, and prospects.

Part I provides a brief overview and outlook for the region and a closer look at three countries in the forefront of change—Poland, Hungary, and Czechoslovakia. Part II examines developments in Albania, Bulgaria, Romania, and Yugoslavia.

Small Area, Large Market Potential

Geographically, the CEE's are not large countries. Their total land area is about 280 million acres, compared with nearly 2.3 billion acres in the U.S. The area of the seven CEE's together approaches the combined size of Texas, New Mexico, and Arizona.

But the region is densely populated, with 130 million inhabitants. While incomes in the CEE's are well above those of many developing economies, they nevertheless fall far short of the incomes of other industrialized nations. Per capita incomes in 1990 ranged from less than \$1,200 in Albania to \$7,500 in Czechoslovakia. In 1990, Gross National Product (GNP) of the CEE's totaled approximately \$590 billion altogether, compared with the Soviet Union's GNP estimated at \$1.7 trillion.

In spite of current low incomes, and the hurdles these countries face as they move into market economies, several factors point to favorable growth prospects for the CEE's. Although agricultural productivity is low by Western standards, due to poor technology, resource use, and management practices, the region has extensive natural resources. Improvements in input quality would therefore boost productivity considerably. The region's most valuable asset is the labor force—relatively well educated, trained, and specialized. And the CEE's are well located for conducting trade with Western Europe, the Soviet Union, and the Middle East.

Poland—the Largest Economy

In area and population, Poland is the largest country in Central and Eastern Europe. With 75 million acres, Poland is about the size of New Mexico or Arizona. Its population of almost 40 million residents, however, is more than 10 times Arizona's, and about a third larger than that of California, the most heavily populated state.

Poland's GNP is the largest of any of the CEE countries, though still only \$150 billion in 1990, about the same as the state of New Jersey. Over a fourth of the labor force is employed in agriculture, making it one of the most agrarian countries in the region. Prior to reforms, Poland's agricultural sector generated 12 percent of GNP. In 1990, agriculture's contribution to Poland's reduced GNP was 30 percent.

Forty percent of Poland's population is rural, dispersed among 42,000 villages in more than 2,100 counties. Although electricity is available in nearly every village, only a third of

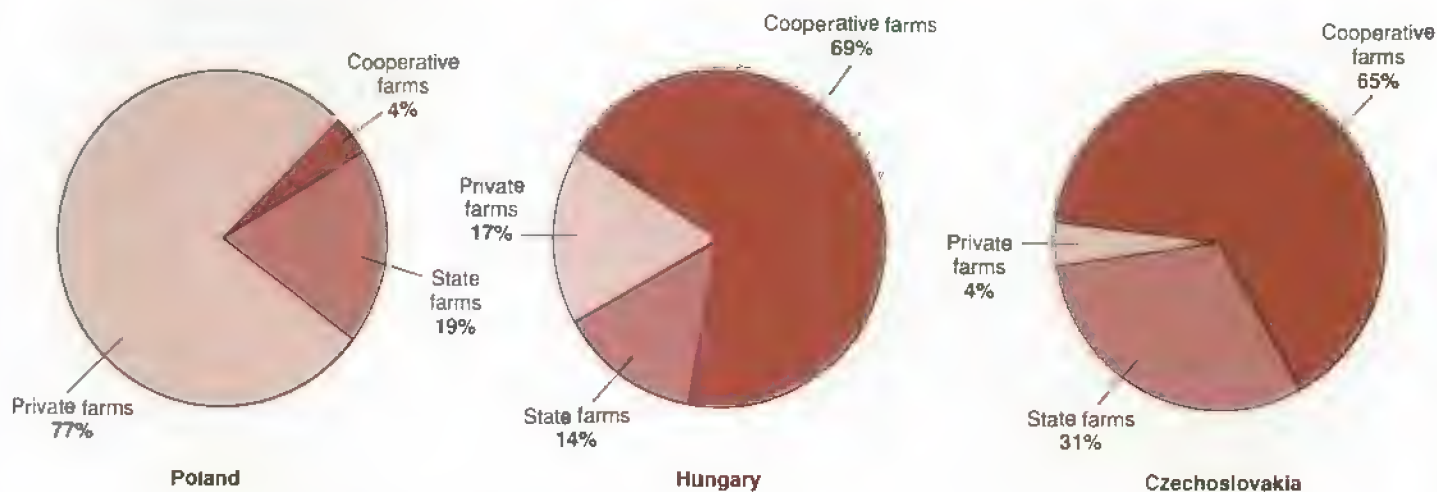
Grain Remains a Principal Crop in CEE Countries ¹

	Poland	Hungary	Czechoslovakia
	1,000 metric tons		
Wheat	9,170	5,900	6,500
Corn	250	6,650	880
Barley	4,217	1,550	3,550
Rye	8,450	223	650
Total grains	27,565	14,483	11,980
Oilseeds	1,128	846	499
Meat & poultry	3,008	1,438	1,505
Potatoes ²	34,400	819	3,167
Sugar	1,900	500	700
Fruits & vegetables ²	6,993	3,524	1,811

¹ 1991 output. ² Production in 1989 from Country Yearbooks, 1990.
Source: USDA

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Most Farms in Poland Were Never Collectivized



Estimated structure of land ownership, 1991. Land reform is still proceeding.

the villages have central water supplies, and only 8 percent have telephones.

Almost half of Poland's land area is arable, compared with 10 percent in the Soviet Union, 20 percent in the U.S., and 30 percent in the European Community (EC). This is partly because the northern two-thirds of Poland is very flat. Nonetheless, since most of the land is sandy and acidic, and has low fertility, crop yields tend to be near the lowest of the CEE's.

Poland lies entirely above the 50th parallel—its southernmost point is level with Winnipeg, Canada—so the growing season is short and cool, further reducing yields and limiting the crops that can be grown successfully.

Unlike most other CEE's, where state and cooperative/collective ownership dominated, private ownership has been widespread in Poland's agricultural sector throughout the period of communist rule. Over 75 percent of agricultural land is located on 2.7 million private farms. A large agrarian labor force and numerous farms have led to a "miniaturization" of agriculture characterized by small farm size and intensive cultivation.

Poland has one of the highest labor-to-land ratios of the CEE countries: 119 workers per 1,000 acres. For the entire region (excluding Albania), the labor-land ratio ranges between about 50 and 150 workers. The U.S. ratio is less than seven workers per 1,000 acres.

The average private farm in Poland is only about 15 acres, compared with the U.S. average of 455 acres. Half are less than 12 acres, while only 1 percent are larger than 25 acres. Most private farms are family-owned and -operated. Private farms in Poland are cultivated more intensively than socialized farms, which are the dominant type of farm in other CEE's.

In 1990, Poland's arable cropland was planted mainly to grains—21 million acres—followed by potatoes, 5 million acres; corn silage and hay, 5 million; rapeseed, 1.5 million; and sugarbeets, 1 million. Rye is the most widely planted grain, with 35 percent of grain area, but wheat (20 percent), barley (15 percent), and oats (10 percent) are also important.

Coarse grain yields average 49 bushels per acre, food grain yields average 58 bushels, and oilseed yields about 35 bushels per acre. While grain yields are low, oilseed yields are generally among the highest in the CEE region and comparable to yields in the U.S. and the EC.

Although the issues of land reform and privatization face all the CEE's, the focus of agricultural debate in Poland is the suboptimal size of most farms. Many observers claim that the small size of farms in Poland makes them inefficient, and hope that market forces will reduce the number of marginal farmers and spur consolidation to more efficient-sized farms.

In addition to the problem of miniaturization, Polish farmers face a marketing and processing system that has been concentrated among a small number of state enterprises. In the past, these enterprises operated government-sanctioned input supply monopolies, and procurement and purchasing monopolies, to discourage private retail and wholesale marketing operations. However, monopoly power was rarely exercised. More often, producers benefited from farm subsidies.

Even with rescission of official monopoly status in the recent reforms, however, price reform and subsidy removal have actually allowed the marketing and processing sector to exercise

Land Reform: A Key to Market Orientation

Each of the Central and East European countries is wrestling with the issue of land reform and privatization—converting state-owned land and resources to private ownership.

In mid-1990, Poland designated as communal property a significant amount of the 23 percent of land held by cooperative and state farms. Some remaining state farms will be privatized under legislation passed in July 1990.

Under this legislation, enterprises selected by the new Ministry of Enterprise Transformation will be converted to joint stock companies, and their shares sold. Other enterprises will be auctioned off or sold directly to individual buyers. Workers will be permitted to buy up to 20 percent of the shares of their enterprise at half price. Coupons to purchase shares will also be distributed among the population.

State farms are to be treated like any other state enterprise, with shares offered for sale. There has been no discussion of returning land to former owners.

In Hungary, land reform is an integral part of privatizing agricultural production. In late July, the Hungarian Parliament passed legislation on landownership and its repatriation, which addressed compensating original owners for land confiscated or damaged after June 8, 1949.

Land will be returned through a system of vouchers issued in an amount that reflects the historic value of owners' landholdings. The vouchers can be redeemed for

land made available from a state land fund. New legislation to deal with land confiscated between May 1, 1939 and June 8, 1949 is expected in late 1991.

Czechoslovakia, like Hungary and Poland, is tackling land reform. The Federal Assembly passed legislation in late May 1991 to resolve the issue of reprivalization of land confiscated during the collectivization period. This "Law on the Revision of Ownership Relations to Land and Other Agricultural Property" applies to agricultural land and property nationalized between February 25, 1948 and January 1, 1990.

An estimated 3.5 million former owners or heirs have the right to claim land. The amount of land to be returned is estimated between 5.4 and 8.6 million acres.

Not all the land in collective and state farms (roughly 15 million acres) will be returned, because the maximum allowable claim is 370 acres. While many former owners' properties exceeded this limit, land in excess of the limit will remain with the collective or state farm. Land parcels cannot be reclaimed if they have been developed, set aside for national defense, planted to perennial crops, or turned into mineral extraction areas, national parks, or memorials. Instead, compensation will be paid for these areas.

With the return of the land to private ownership, agriculture is expected to gain a stronger foothold in the new free market economies, paving the way for more extensive private production.

considerable monopoly power. And even where more than one procurer or input supplier operates, competitive pricing is not yet practiced.

Thus, Polish farmers are currently caught in a squeeze—by input suppliers raising prices above previously subsidized levels, and by procurement enterprises keeping increases in prices paid to farmers below overall rates of inflation. Retail food prices have risen faster than wholesale agricultural prices, and processor and marketing margins have increased. Polish consumers spend a hefty 50 percent of their disposable incomes on food. But with a 30-percent contraction of personal income since the beginning of 1990, food demand has been under strong downward pressure.

Marketing and processing enterprises have tried to weather the contraction, usually by increasing profit margins, and to a lesser extent by reducing costs and expanding sales. The firms have been more successful in expanding exports of food products. In 1990, food product exports posted one of the most rapid growth rates of all sectors in the Polish economy. Food products now account for 22 percent of Polish exports.

Important export markets are the EC and other CEE's. Poland exports a large amount of rapeseed, berries, and mushrooms to the EC and three-quarters of the EC import quota of calves and lambs. Most other Polish food exports—grains, meat, field vegetables, and apples—go to Eastern markets. Still, exports account for only 10 percent of the agricultural commodities produced in Poland.

In addition to suffering from reduced sales to monopsonistic processors, Polish farmers face increased agricultural imports, especially subsidized imports from the EC. In response, farmers have lobbied for higher tariffs on imports. As of August 1, 1991, tariffs on farm produce imports were increased to a range of 25-35 percent.

The government also began a limited program of intervention procurement and farm credit subsidies. The Agency for Agricultural Marketing recently moved to support rye prices at \$0.85 per bushel, wheat at \$1.60, and pork slaughter animals at \$750 a ton. All of these prices are down from early 1991 levels, with pork falling the most.

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In the 1991 national budget, the government designated over \$350 million for agricultural credit. Part of this fund is to modernize productive technology, especially water supply systems. A large part of the funding has already been used to purchase fertilizers and pesticides.

Hungary's Head Start

Nestled in the Carpathian Basin bordered by Austria, Czechoslovakia, Romania, Yugoslavia, and Ukraine, Hungary is emerging as an important economic force in the region, especially in agriculture. Hungary is a small country, about the size of Indiana, with 35,919 square miles. It has slightly fewer residents than the state of Ohio, with a total population of just over 10.5 million.

The terrain is hilly in the north and west, and flat in the east and southeast—known as the Alföld, or Great Plain. Two rivers flow through Hungary, the Danube and the Tisza. Both are heavily used for industry, irrigation, and transportation. Temperatures in Hungary vary widely, rainfall is uneven, and the east often suffers from drought. Average rainfall throughout Hungary is comparable to the level in Wichita, Kansas—about 25 inches annually.

For more than 20 years, Hungary pursued a more liberal economic program than its neighbors. In 1968, the New Economic Mechanism (NEM) implemented the transfer of economic power from the central authorities to individual enterprises. Factory managers were given more control and flexibility over production, investment, and price decisions. Agriculture enjoyed a period of prosperity and self-government.

As private agricultural enterprises thrived, critics claimed that the NEM was causing "the restoration of capitalism to the countryside." By 1973, the NEM had come under fierce attack, and the government reclaimed control of the decisionmaking process, and thus the economic life of Hungary. Still, a degree of economic freedom remained, especially in agriculture, where private production had achieved effective results. Today, the success of the Hungarian economy in carrying out reform and attracting more foreign investment than its Central and East European neighbors is partly due to its more recent experience with similar liberal policies.

With few natural resources other than fertile soil and large rivers, agriculture has become a key component of the economy and its development. Of 23 million acres, 13 million are considered arable, with nearly all of it (12 million acres) cultivated. The principal crops include wheat, corn, and barley—accounting for just over 6 million acres. Other production includes fodder crops, sunflowerseed, sugarbeets, fruits, and vegetables.

Grain yields are among the highest in the region and are comparable to or higher than those of Western Europe and the U.S. Average wheat yields are about 75 bushels per acre, more than twice the U.S. average; corn yields of 100 bushels per acre are about 20 percent below U.S. yields; and barley yields are 50 percent higher than in the U.S., at about 85 bushels per acre.

Hungary has three types of farm organization—private, cooperative, and state-owned. Although land reform currently underway will lead to changes in ownership, over 69 percent of agricultural land has been on cooperative (collective) farms. These farms are very large, averaging 688 acres. State-owned farms hold 14 percent of the agricultural land, and their size is close to the U.S. average, at 395 acres. State and collective farms together have a labor-land ratio of nearly 53 workers per 1,000 acres, and one tractor for every 240 acres.

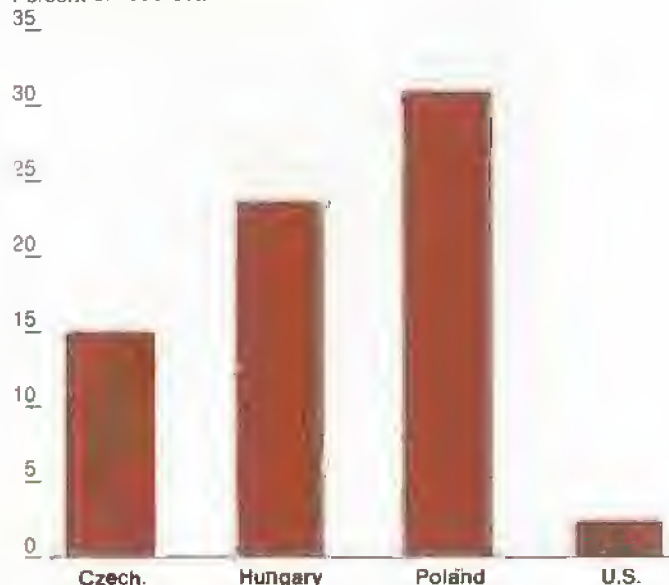
Private farms are the smallest, some no more than family-sized plots used mainly for personal consumption, but they are highly productive. Because of a concentration in production of high-value products, the 17 percent of agricultural land held by private farms produces 30 percent of Hungary's total agricultural output, over 50 percent of all fruits and vegetables, and in some years, 40-50 percent of pork and poultry.

Economic reform has been especially difficult for Hungarian consumers and farmers, for several reasons. Pre-reform consumer subsidies on some agricultural products stimulated artificially high consumption and the substitution of food purchases for other, more scarce goods. For example, despite a low per capita GNP in 1990 of \$5,800, Hungarian consumers eat more meat and poultry than any other CEE (except Czechoslovakia), and significantly more than many Western economies, including Italy and the United Kingdom.

When the consumer subsidies were eliminated, retail prices skyrocketed and led to an immediate contraction in demand for some foods, particularly meat and dairy products. Producers were slow to react to these shifts in consumption, creating a

Agriculture Is Relatively More Important In the Economies of Central Europe

Percent of 1990 GNP



Source: PlanEcon, July 1991.

glut of milk and meat on the market. Instead of responding to declining domestic demand by lowering output, producers maintained production levels and hoped for government intervention, further exacerbating the problem.

Hungary's agricultural exports average approximately \$2 billion annually, supplying 30 percent of hard-currency earnings. Trade between Hungary and the Soviet Union, and other countries in Central Europe, collapsed in January 1991 when they shifted to trade on a strict hard-currency basis.

Since then, Hungary has scrambled to expand trade beyond its own backyard in a variety of ways. The Hungarian government (like the Polish and Czechoslovak governments) has been negotiating an agreement with the EC to lessen trade restrictions between the EC and Hungary. With a continued glut of meat, milk, and other dairy products, the government is using export subsidies varying from 25 to 35 percent for dairy products, pork, and poultry.

To export the excess grain resulting from an excellent harvest this year, loan guarantees are being offered to exporters. The government has also explored the possibility of diverting a portion of the food credits being offered by other countries to the Soviet Union to buy Hungarian grains.

Czechoslovakia: Farms That Stretch for Miles

Czechoslovakia is the size of New York state, located on the same latitude as the U.S.-Canadian border. Its population is about 16 million, roughly the same as Texas. Per capita GNP of \$7,500 in 1990 was the highest of any CEE, with a total GNP comparable to Massachusetts.

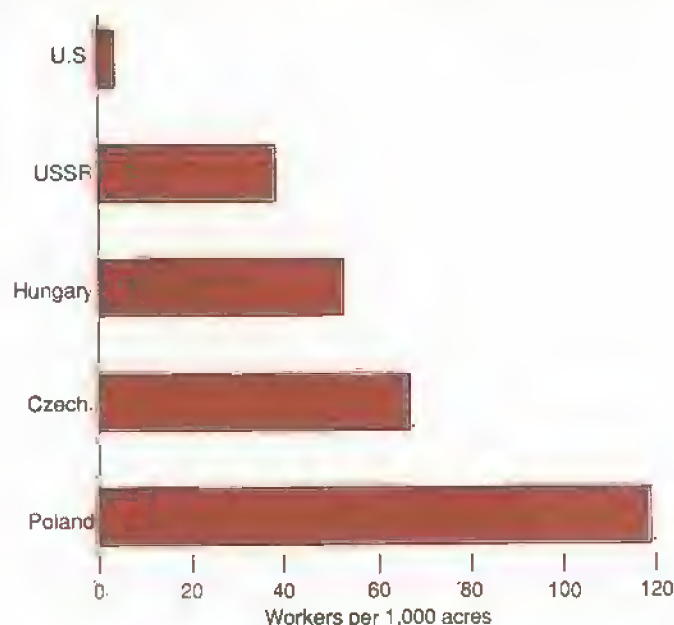
Czechoslovakia has two distinct climates. In the western regions of Bohemia and Moravia, a maritime weather pattern dominates, as in Western Europe or northern Pennsylvania. The eastern region of Slovakia, on the other hand, is influenced by the continental systems dominant in eastern Europe, with extreme temperatures, cold winters, and frequent droughts.

The major commodities produced are grains. Of 11 million acres of cropland, 6 million are used mainly to grow wheat and barley, with oats, corn, and rye accounting for about 10 percent of cropland acreage. Grain yields average about 80 bushels per acre. On the remaining 5 million acres, farmers plant sugarbeets, potatoes, and forage crops.

In land ownership, Czechoslovakia was an extreme example of socialized agriculture during the communist period. Most agricultural land has been held by large collective and state farms. Collective farms are technically the property of the workers who take part in the farms' operations. On state farms, however, workers had no right to the land.

Both cooperative and state farms are extremely large by any standard. Cooperative farms average 6,000 acres, and the huge

Former Communist States Have More Farm Workers Per Acre than U.S.



state farms are almost four times larger, at 22,000 acres. To put this in perspective, a 22,000-acre farm is about 34 square miles, or a little more than half the size of the District of Columbia.

Like most other CEE's, before reform only a small proportion of agricultural land (4 percent, or 1.5 million acres) was privately held. Most of this private land was in the hilly regions of Slovakia where large mechanized farms were the least viable. Another half-million acres was distributed across the country in 1-2-acre subsistence plots.

Though private landholding in most CEE's represents only a small share of agricultural land, these farms usually produce an inordinately large share of agricultural output, particularly live-stock products. This is not the case in Czechoslovakia, where privately held farms produce only 4 percent of gross agricultural output. The exception is fruit and vegetable production—half is produced by privately held farms.

Under central planning, both consumer and production subsidies were prevalent in Czechoslovakia. Annual food subsidies—mainly for meat and dairy products—ran as high as \$1.5 billion. But unlike other CEE's, food shortages and long lines were not a serious problem, because production subsidies of \$1 billion ensured available supplies to meet demand. Hence, per capita meat consumption in Czechoslovakia is the highest of any CEE, nearly 200 pounds per year.

In the emerging market economy, food prices have risen, income has deteriorated, and adequate food supplies have given way to product gluts. One of Czechoslovakia's most difficult challenges is to devise agricultural policies to bolster the

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development of market forces while limiting the fall in demand for individual agricultural products.

In July 1990, food subsidies were completely abolished, and as a result, prices to consumers immediately rose 25 percent. At the beginning of 1991, most prices were freed, and for the first 6 months, food prices rose another 27 percent, with most of the increase coming in January. Price ceilings were maintained on some basic commodities such as flour, potatoes, sugar, pork, eggs, poultry, and milk. The prices of these products stabilized or declined during the late spring and early summer. As a result, price ceilings were recently abolished.

Overall, consumer price inflation in the economy was roughly 49 percent in the first half of 1991, so relative food prices have actually fallen 15 percent during that period. For all of 1991, food consumption is estimated down 25 percent. Deterioration in income is the main factor behind the fall in food consumption. In the first quarter of 1991, real wages in the agricultural sector fell 34 percent, and 24 percent in the rest of the economy.

Regulated producer prices were scheduled to cover only 6 percent of producer sales by October 1991. Roughly 30 percent of the total \$1 billion in output subsidies was directed to agricultural producers in 1991, down substantially from the 1990 level of \$900 million. To offset the decline in production subsidies, the government has introduced republic- and federal-level market regulation funds.

Market regulation funds provide budget authority for the government to purchase commodities to support farm prices. There was strong pressure early in 1991 to take such action, as the index of farm prices increased only 0.2 percent from December 1990 while inflation increased 40 percent. Beef prices had actually fallen 20 percent, and milk prices by 6 percent. Purchases of farm products by processors declined substantially—36 percent for beef, 20 percent for pigs, 18 percent for milk, and 26 percent for eggs. Thus, demand for farm inputs and farm machinery also declined significantly.

These Agricultural Outlook articles were prepared before the dissolution of the Soviet Union and the emergence of 11 of the 15 former Soviet republics as the Commonwealth of Independent States.

1991—the Turning Point?

Two years after the political and economic upheaval, some stability is returning to parts of Central and Eastern Europe. But although prospects for agricultural production in 1992 look favorable, farm profitability will continue to be squeezed. In place of the command system that emphasized planned production targets with no adequate price mechanism, market forces are beginning to work.

Farmers throughout the region are starting to make production decisions based on expected profitability. They are starting to adjust production to the falling domestic and international demand for grains and meats. For example, in Poland, farmers have reportedly left some crops unharvested, as current prices would not cover the cost of harvesting and storage. Under central planning, crops were never left unharvested, unless their quality was extremely poor.

In 1992, there will likely be slight production declines in meats and grains, as farmers react to the excess supplies and subsequent low prices. Demand for grains and meats should stabilize in 1992. However, it is unlikely that the decrease in supply will match the decrease in demand that has already occurred, so surpluses will likely plague 1992.

Farmers' difficulties in adjusting to lower domestic demand were exacerbated by measures allowing imports—long denied under central planning—of specialty agricultural products, EC agricultural products of higher quality and better packaging than domestic goods, and various nonagricultural consumer goods. For the first time in years, the food sectors of these economies must aggressively compete for consumers' spending.

High production and falling demand combined to depress farm prices significantly throughout 1991. Planting intentions for grains still appear fairly high for the 1992 crop, though fortunately below 1991. Assuming normal weather during 1992, grain production should decline by about 5-10 percent.

Livestock inventories continue to decline, but low feed prices have eased the adjustment thus far. Given the lackluster demand, continued declines in animal numbers and livestock production are likely for 1992.

In some or all of the CEE's, efforts are underway to restore equilibrium in the agricultural markets. A continuing fall in demand for milk in Hungary has led government, producers, and processors to agree to a series of measures to regulate the market. Producers will reduce output by 15 percent in return for a slaughter premium of 10,000 forint (\$143) per cow. The export subsidy for milk is to be raised from 30 to 35 percent, and in exchange, the domestic producer price of milk will be reduced. The government will also purchase and provide subsidized milk for disadvantaged individuals.

Hungary, Poland, and Czechoslovakia have each made extensive efforts to recapture old Soviet markets and break into new Western markets to revive agricultural trade that has stagnated. The efforts were complicated by a shift to trade with the Soviets on a hard-currency basis in January 1991.

To compensate, the countries are exploring a variety of commercial sales or barter agreements with the Soviet Union, the EC, and other traditional trading partners. Hungary negotiated the trade of 700,000 tons of wheat with the USSR and another 260,000 tons with the EC, Romania, and other trading partners. The government has offered loan guarantees for 500,000 tons of this wheat to be sold to the USSR, financed by a bank consortium headed by the new Central European International Bank. Hungary also plans to export to the USSR another 300,000 tons of grains; wine and champagne valued at \$110 million; as well as pork and beef.

On September 21, Poland and the Soviet Union signed a new barter agreement in which Poland will trade 600,000 tons of potatoes and several thousand tons of apples and onions for 1.5 billion cubic meters of gas.

All three countries expect to take advantage of "triangular trade" agreements in which the EC is willing to give credits to Soviet republics to purchase agricultural products from European countries. The Association Agreements signed between the EC and Czechoslovakia, Hungary, and Poland allow for the liberalization of agricultural and other imports into the EC. These two developments should help broaden CEE trade relationships with countries beyond the former centrally planned economies.

The key question facing East European farmers in the next year is how to respond to the price reform measures implemented in the last year in their respective countries. If they respond with enough reduction of supply, prices should stabilize or increase. But if they continue to adjust slowly to the decline in demand, domestic prices will continue to fall.

CEE farmers are lobbying their governments for protection from falling prices, but the governments have limited opportunities to provide support. Falling revenues and strict fiscal policy regimes imposed by international assistance agencies mean that significant intervention by governments to provide support is unlikely. [Jason Lamb and Mark Lundell (202) 219-0621] **AO**

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Central Europe: Agriculture in the New Market Economies

Part II: The Balkan States

Concluding a two-part series on Central and East European countries (CEE's), AO looks at the transition to market-oriented agriculture in the Balkan states--Yugoslavia, Bulgaria, Romania, and Albania

Past and present political events in the Balkan states make economic reform all the more challenging. Yugoslav farmers are caught up in civil unrest that reflects long-standing ethnic and national rivalries; Bulgaria is forging ahead with agricultural reform despite precious little experience with private operation in over four decades; Romanian farmers are attempting to rebuild the country's self-sufficiency in agriculture after the damaging policies of the Ceausescu regime; and Albania is overcoming 40 years of isolation from the rest of Europe and preparing to enter the community of developed countries.

As in other CEE's, agricultural profits are suffering as the countries undergo the painful transformation from centrally planned to market-driven economies.

Yugoslavia-- Reforms Amidst Civil Strife

Yugoslavia is officially a confederation of republics composed of major South Slav ethnic groups including Serbs, Croats, Macedonians, and Slovenes, as well as a number of national minorities that include Albanians and Hungarians. The population approximates the combined size of New York state and New Jersey--about 24 million persons. Roughly 22 percent of the labor force is engaged in agriculture, and 27 percent in mining and manufacturing.

Yugoslav territory covers an area of nearly 98,800 square miles, making it the largest country in the Balkans and the ninth largest in Europe. It is nearly 600 miles long, with the central portion of the country almost 300 miles wide. The republic of Serbia makes up 35 percent of Yugoslavia's territory and Croatia 22 percent.

Agricultural land covers 57 percent of total area. Although nearly half of the agricultural land is arable, only 2 percent of arable land is irrigated. The Pannonian Plain, an agriculturally rich lowland area in the north, produces at least 30 percent of the country's grain.

Central and Eastern Europe: Common Borders, Unique Challenges



Grains Dominate CEE Agriculture ¹

	Bulgaria	Romania	Yugoslavia	Albania	Total CEE's
			1,000 metric tons		
Wheat	5,300	5,300	6,530	450	39,150
Corn	2,200	8,500	12,000	400	30,880
Barley	1,470	3,000	700	35	14,522
Rye	45	70	72	12	9,522
Total grains	9,107	16,859	19,639	927	100,560
Oilseeds	465	686	577	5	4,206
Meat & poultry	796	1,255	1,468	NA	9,470
Potatoes ²	538	4,420	2,858	NA	46,202
Sugar	80	334	885	14	4,413
Fruits & vegetables ²	2,025	5,307	5,040	NA	24,700

NA=not available.

¹ 1991 output. ² Production in 1989 from Country Yearbooks, 1990.

Source: USDA

Despite the 21 rivers that flow through Yugoslavia, each longer than 100 miles, their energy, transport, and agricultural potential has not been realized. Moreover, drought and flooding are frequent. Except for the northern plains and a few major river valleys, the country is dominated by mountainous territory stretching from the northwest to the southeast along the eastern shores of the Adriatic Sea.

Yugoslav investment policy has not been especially supportive of agriculture. Agriculture's share of investments has been and still is low. The return on agricultural investment is generally lower than the average return in other sectors of the economy, partly because of low prices for agricultural products. Throughout the 1970's and 1980's, the Yugoslav government used foreign credit largely to develop the Adriatic coast's tourist industry in hopes of generating foreign currency earnings.

The socialized sector of agriculture has been made up of about 2,700 "kombinats," vertically integrated enterprises that oversee every stage of production from farm to retail. Profits of the kombinats were severely curtailed by soaring interest payments and high debt to federal banks during the past 5 years.

However, for most of Yugoslavia's postwar history, the private sector dominated Yugoslav agriculture. In contrast with most other CEE's, about 70 percent of the land is already in private hands, and the number of socialized farms continues to decrease. The majority of socialized farms are about 125 acres, but some large estates are over 12,000 acres.

Since the early 1950's, following an unsuccessful attempt at complete nationalization of land, the Yugoslav government has allowed private ownership of arable land up to 25 acres. This maximum was based on what a single family was considered able to cultivate without hiring additional help. Most small family farms are 5 acres or less. In 1990, maximum private ownership was abolished, and legislation is currently being considered to return land confiscated from private individuals and churches after World War II.

Over the past few years, agricultural production has been relatively stable, dominated by cereal crops (24 percent of agricultural output) and by livestock, including cattle (21 percent of output), hogs (14 percent), and poultry (10 percent). Industrial crops and vegetables contribute another 18 percent to total output.

Yugoslavia is the third-largest grain producer of the CEE's, following Poland and Romania, with annual production averaging around 16 million tons over the past 5 years. It is one of the highest corn producers of the CEE's, averaging over 9 million tons annually. But Yugoslavia is the smallest producer of barley among the CEE's, except for Albania, averaging 653,000 tons during the past 5 years. Wheat yields are fairly high at 63 bushels per acre, as are barley yields at 51 bushels, but corn yields are low, averaging around 66 bushels.

The summer of 1991 saw a record grain crop in Yugoslavia, in contrast to the output following 1990's disastrous drought. The wheat harvest reached a record 6.5 million metric tons in 1991. Although farmers welcomed the large wheat harvest, they now face difficulties in transporting and selling the grain.

Among the most serious effects on agriculture during the current Yugoslav political and ethnic struggles has been the increased cost to producers for inter-republic shipping, as well as for export of commodities. The higher costs are due to taxes imposed by the individual republics, and unreliable transportation as military skirmishes escalated.

The predominantly agricultural province of Voivodina in north Serbia, given its proximity to the areas of military conflict, has been particularly affected by the fighting that intensified throughout the summer months. Voivodina's farmers cannot be guaranteed that their goods will arrive safely to designated areas through inter-republic routes. In addition, sporadic confiscation of goods as they move across republic borders makes it even harder for surplus grain to be distributed to buyers. Previous transportation routes to Western Europe have been

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rerouted through Hungary, but this involves the added expense of duties imposed by the Hungarian government.

Before the harvest in mid-July, the Federal government announced austerity measures that eliminated traditional price supports for Yugoslav agriculture, as well as bank compensation for individual farmers' debts. But with the recent grain surplus, the government has agreed to set aside over \$1 billion in new credits to provide support for 60 percent of the estimated value of the 1991 harvest.

In addition to receiving Federal aid, grain producers are actively looking for buyers who are able to purchase the grain surplus, especially with convertible currency. Yugoslavia planned to export at least 1 million tons of grain with a 40-percent price subsidy in 1991. The Soviet Union reportedly contracted for delivery of at least 300,000 tons. If Yugoslav farmers can manage the successful export of grain, they would earn foreign currency that is badly needed for purchasing agricultural equipment as well as other farm inputs.

Bulgaria-- Forging Ahead With Reform

Bulgaria's location near water transport points provides it with a number of natural advantages. Bulgaria borders Romania to the north, Turkey and Greece to the south, Yugoslavia to the west, and the Black Sea to the east. Bulgaria is not a large country--only slightly larger than the state of Tennessee (42,683 square miles or 27.3 million acres).

With 1990 GNP of \$43 billion--about the size of Iowa--Bulgaria had the lowest GNP of the CEE's, except for Albania. Its population of 8.9 million inhabitants is the second smallest of the CEE's, but the country has over 200 inhabitants per square mile, compared with the U.S. average of 70 inhabitants per square mile.

Two mountain ranges and two major rivers divide the country geographically and by commodities produced. The Balkan Mountains stretch west to east, trailing the Transylvanian Alps in Romania. To the north of the Balkan Mountains lies the granary of Bulgaria--the Danubian Plateau.

The second mountain range--the Rhodope Mountains--lies in the southwestern corner of Bulgaria. Vegetable and fruit production is concentrated in the Thracian Plain, the valley north of these mountains and south of the Balkan range. The Danube River is the major source of irrigation and transportation for the Danubian Plateau, and the Maritsa River for the Thracian Plain.

Agriculture covers a large portion of Bulgaria's land. Of the 27.3 million acres in Bulgaria, 53 percent is agricultural, over two-thirds of which is cultivated. Besides grains, the Danubian Plateau supports other food and fodder crops. Closer to the Balkan foothills, orchards dot the landscape, while reed and licorice grow wild in the areas nearest the Danube River. The

Thracian Plain's natural vegetation--mid-latitude forest and Mediterranean flora--has been replaced by truck vegetables, fruit orchards, berries, vineyards, cotton, and tobacco.

Wheat, corn, and barley are the most abundant Bulgarian crops, planted on over 50 percent of arable land. Other key crops include sugarbeets, alfalfa, sunflowerseeds, tobacco, fruits, and vegetables. Bulgarian wheat yields of 64 bushels per acre in 1990 were almost 65 percent higher than the U.S. average. By contrast, typical Bulgarian corn yields of 63 bushels per acre were 46 percent lower than the 1990 U.S. average. Barley and cotton yields in Bulgaria were 25 to 60 percent higher in 1990 than in the U.S., while sunflowerseed yields in the two countries were similar.

Roughly 20 percent of the labor force is employed in agriculture, which shares the labor-intensive character of CEE agriculture. There are 62 workers but less than six tractors per 1,000 acres in Bulgaria.

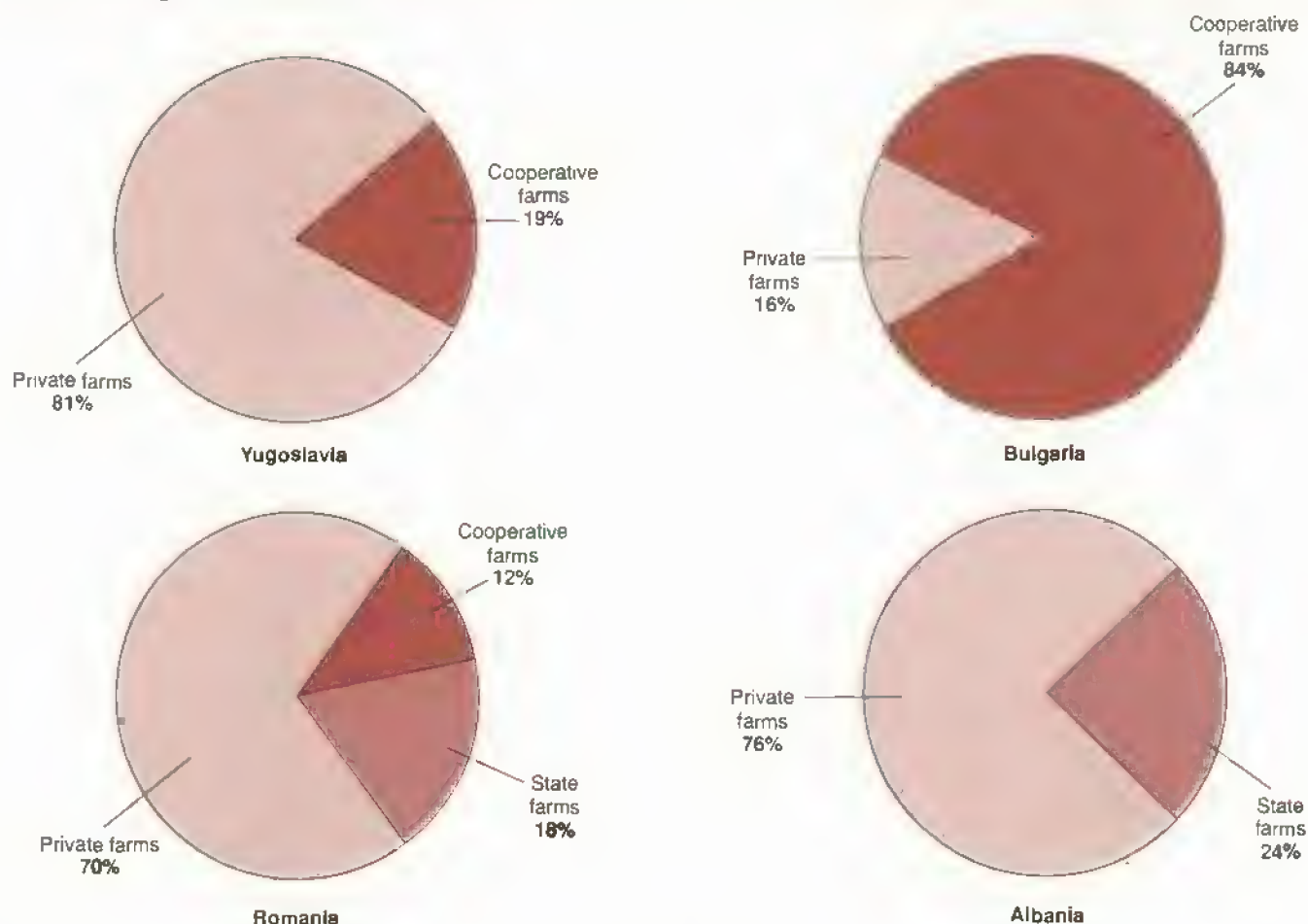
Land collectivization after World War II was extensive; virtually all agricultural land came under state and cooperative control. Since the formation of state and cooperative farms, Bulgaria reorganized the structure of its farm sector several times. In the early 1970's, state and cooperative farms were consolidated into huge agro-industrial complexes, averaging 24,000 acres with several thousand workers, and comprising 84 percent of total agricultural land. The remaining 16 percent of agricultural land was allocated for private operation (but not ownership) in small plots of 1-2 acres. Only 1 percent of total agricultural land is actually privately owned.

Beginning in 1986, the agro-industrial complexes were gradually broken up into much smaller components. With land reform in the forefront of agricultural change, the agro-industrial complexes have been disbanded altogether and await claims from previous owners.

After a slow start, Bulgaria is forging ahead to establish itself in the forefront of change along with Poland, Hungary, and Czechoslovakia. In spring 1990, while the other CEE's (excluding Albania) were ousting communist leaders and establishing democratic governments, Bulgarians initially used the ballot to re-elect their communist officials. This led observers to doubt that Bulgaria was on the road to reform. But in October 1991, the Bulgarians elected a democratic government.

Agricultural policy reform in Bulgaria has cut farm profits. In February 1991, almost all producer and consumer prices were decontrolled, leading to declines in producer prices and rising consumer prices. With a decline in demand, producer prices fell relative to other prices. Despite the general liberalization, by July 1991 the government provided support for farmers by establishing minimum producer prices for pigs, poultry, calves, and milk, and minimum export prices for calves, lambs, pigs, meat, and cheese. Ceilings were shortly placed on some consumer prices in response to high inflation.

Most Farms in Bulgaria Are Still Collectivized



Estimated structure of land ownership, 1991. Land reform is still proceeding.

However, the real economic picture for Bulgarian farmers is seen in the relative input and output prices. Input suppliers and output purchasers are still acting in a monopolistic fashion. Input prices have risen dramatically while procurement prices paid to farmers have risen more slowly. Thus, the short-term impact of price liberalization has been to decrease net returns to farmers and reduce incentives to produce.

Area sown to spring crops of corn, soybeans, and potatoes in 1991 was down as much as a third from 1990. Vegetable production was reported down 37 percent from a year earlier. Animal numbers, and milk and egg production were also reported lower.

So far, the combination of reduced supply and a fall in demand because of lower incomes has averted shortages. To ensure full

shelves this winter, however, Bulgarian officials have set restrictions on exports of some basic agricultural commodities, such as bread, coarse grains, sunflowerseeds, and vegetable oils. Other measures include a surtax of 15 percent for most imports, and minimum export prices to discourage livestock sales to foreign buyers.

The foreign trade sector has undergone significant reform in the past year. And, while many of the changes are trade enhancing, the economic and political disruption in the region, including the Soviet Union, has put strong downward pressure on Bulgaria's exports as it has for other CEEs'. Bulgaria has historically been closely tied to the Soviet Union, but is making new efforts to attract the interest and investment of Western countries.

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Romania-- Recapturing Agricultural Productivity

Romania borders the Black Sea to the east, Bulgaria to the south, Yugoslavia and Hungary to the west, and the republics of Ukraine and Moldavia to the north. The third-largest CEE with an area of 91,699 square miles (58.7 million acres), Romania is about the size of Oregon or Wyoming. But its 23 million inhabitants make it one of the most densely populated CEE's, with 253 persons per square mile.

Romania's GNP in 1990 was estimated at \$94 billion, the fourth largest among CEE's, with per capita GNP at \$4,043. Over half the population is urban, and nearly 30 percent of the labor force is engaged in agriculture.

Sixty-two percent of Romania's land is agricultural (36.4 million acres). Over 23 million acres are arable, and approximately 13.5 million acres are planted to cereal crops. Romanian agriculture is labor intensive, with approximately 100 workers--but only seven tractors--for every 1,000 acres.

The Carpathian Mountains and the Transylvanian Alps, along with the Danube and Prut Rivers, define the major agricultural areas of Romania. In southern Romania, between the Transylvanian Alps and the Danube River, lies Walachia--the breadbasket of Romania--which provides half the annual grain harvest and roughly half the fruit and grapes.

To the west of the Carpathians and north of the Transylvanian Alps is Transylvania, with poor soils and rough terrain restricting large-scale mechanized farming. Livestock production dominates in the mountains of Transylvania, while potatoes and some grains are grown in the central basin.

The major grains planted in Romania are corn, wheat (predominantly winter varieties), and barley. Corn and wheat area comprise over half of all arable land and 90 percent of land planted to grains. Important nongrain crops include hay and silage, sunflowers, potatoes, soybeans, and sugarbeets.

Crop yields in Romania vary considerably--especially compared with those in the U.S. For example, corn yields at 47 bushels were about 40 percent of the 1990 U.S. corn yield, while soybean yields at 11 bushels per acre were less than a third of 1990 U.S. yields. On the other hand, Romania's wheat yields of nearly 53 bushels per acre, and barley at 55 bushels, were almost 20 percent higher than U.S. yields in 1990. Sunflowerseed yields are about equal in the two countries.

The transformation from centrally planned to market economy in Romania is especially challenging because of the economic policies of former President Ceausescu during the last 20 years. Ceausescu's economic policy was an extreme example of the East European communist emphasis on industry over agriculture. Rural villages were literally destroyed in order to force people into urban industrial areas.

During the 1920's and 1930's, before communist rule, Romania's abundant production enabled it to export agricultural products to the rest of Europe. But by the 1970's and 1980's, Romania could scarcely feed its own people.

Wherever possible, Ceausescu and his predecessors consolidated land into large state and cooperative farms. Prior to the sweeping land reform begun in 1991, 73 percent of agricultural land had been collectivized into cooperative farms, and 18 percent into state farms, leaving only 9 percent under private ownership. At an average size of over 12,000 acres, state farms had priority access to machinery, chemicals, and irrigation. Workers on cooperative farms, which averaged over 7,000 acres, owned their own land and certain basic equipment, but these farms had little more autonomy than the state farms.

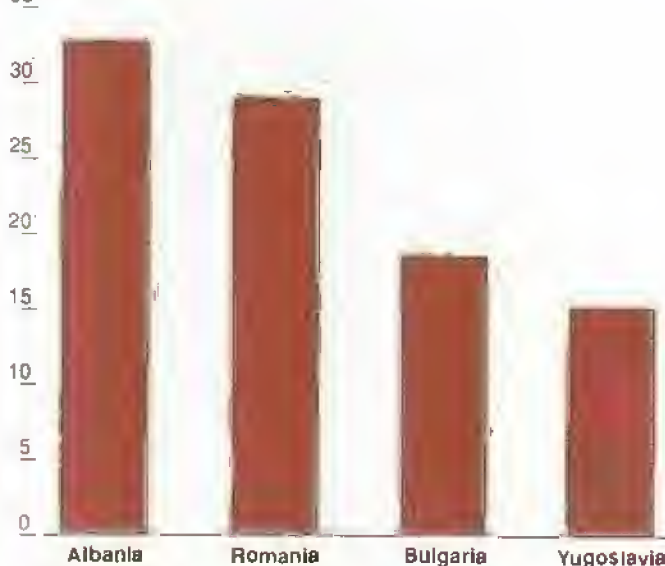
Private farms, on the other hand, were usually less than 1 acre and located in relatively inaccessible mountainous regions where use of heavy machinery was impractical. Nevertheless, productivity on this land had higher yields per acre than cooperative and state-operated land.

In addition to the 9 percent of agricultural land under private ownership, about 8 percent of land on cooperative farms was reserved for individual farming needs, so that 15 percent of total agricultural land was effectively under private, rather than state, control.

Privately operated land yielded four times more fruit output per acre than state farms, and had significantly higher yields in grain, milk, beef, pork, and vegetable production. Data from 1987 show that 50 percent of sheep meat, 40 percent of beef,

Agriculture Remains a Large Sector in the Balkan Economies

Percent of 1990 GNP



Source: PlanEcon, July 1991.

Land Reform Challenges The CEE's

Bulgaria

The scope of land reform in Bulgaria is still somewhat narrow. A Law for Agricultural Land Ownership and Use was passed in February 1991. The main provision is to return land to original owners or their heirs as indicated in the 1946 Agrarian Reform Law.

Land ownership is limited to 20 hectares (49.4 acres) in "intensive" areas of cultivation and 30 hectares (about 74 acres) in hilly or mountainous areas. To prevent fragmentation, the land that owners receive is not necessarily their original holding, but owners are entitled to receive plots equivalent in size and quality. The land must be used for agricultural purposes, though an owner may lease the land to someone else who will use it for agriculture. The land may not be sold for 3 years, and foreign ownership is prohibited.

An interesting development in Bulgaria's land reform process is that relatively few people (only 10 percent by late September 1991) have claimed land previously owned or held in title. This may force the government to maintain state and cooperative farms until the land is either claimed, or sold to citizens wishing to farm.

Another possible solution is settlement by landless individuals or those who would like to return to agriculture but have only small parcels of land. Municipal land commissions (set up to deal with the land reform question) may allocate land to these people from acquired stocks of unclaimed land and land purchased from individuals not interested in farming.

Romania

Because so much of Romania's agricultural land was collectivized into state or cooperative ownership, land

reform has become a key agricultural issue. Romania's post-communist land law, passed in February 1991, did not focus primarily on the restitution of previous owners' specific land parcels, but did acknowledge property rights of citizens whose land was incorporated into cooperatives.

Through an intricate set of guidelines, each claimant is to be compensated with land up to 10 hectares (24.7 acres). Restrictions were established on selling, farming, foreign ownership, and family plot size. In addition, those whose land was confiscated for state farms will become shareholders in new agricultural joint stock companies, which have replaced the old state farms. Land not claimed will be forfeited to the state.

The intent of the law is to encourage landowners back into cooperative farming, although with a more autonomous structure than in previous years. This may save Romania from fragmentation of farming units (as currently exists in Poland). Surprisingly enough, this land law along with Albania's new land legislation has been among the most effective in distributing land to private landowners in a timely fashion. Recent estimates indicate that almost 70 percent of agricultural land is now in private hands in Romania.

Albania

The agricultural landscape in Albania has changed considerably since the beginning of communist rule. In 1950, 92 percent of the agricultural land was owned by the private sector, with the remaining 8 percent owned by either the state or the cooperative sector. By 1989, none was in private hands--all agricultural land was owned by the state or cooperatives.

A bill passed in May 1991 addressed land ownership, and has succeeded in distributing former cooperatively owned agricultural land for private use. Disputes erupted over redistribution, but thus far, it has been the most effective land ownership restitution bill in all the CEE countries. Currently, approximately 76 percent of agricultural land is estimated to be privately held.

28 percent of pork, and 63 percent of fruit production came from private production sources.

Throughout 1990 and 1991, Romania experienced high inflation and profitability in farming has suffered. Food prices were decontrolled in February 1990. However, this first round of price revision applied to only a small portion of available supply. On April 1, 1991, the second--and broader--round of price deregulation on agricultural commodities was instituted. Within the month, food prices rose 58.6 percent, while prices of nonfood products and services rose 5.4 and 16.1 percent.

Laws were abolished in 1990 that had required producers to sell all agricultural commodities to the state, and prices paid by the

state for agricultural products were raised 40 percent on average. Since then, more agricultural commodities have been sold in a free market, at prices higher than those prescribed by the state--products such as fruit, vegetables, live animals, and cheese. In addition, private supplies of wheat, corn, and other storable commodities have increased dramatically with the abolition of obligatory sales.

Agricultural trade was an important source of hard currency earnings to Romania both before and during communist rule, but has been a major cause of hard currency debt since Ceausescu's death. Even with lower production under communist rule, the Ceausescu government earned hard currency by selling scarce agricultural products to the West at the

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expense of domestic food supplies. Through these measures, the government was able to pay off all its foreign debt.

When Ceausescu fell, the interim government halted the export of food in order to improve domestic availability. In addition, imports of agricultural commodities were allowed, in order to satisfy pent-up demand for basic commodities such as sugar, coffee, and meat. In the last 2 years, Romania's agricultural trade deficit with the U.S. alone has been over \$250 million. As this winter approaches, the government is concerned again about the adequacy of food supplies. The EC and the U.S. are currently considering food aid packages.

Romanians hope that in the near future, their new freedom combined with the country's natural resources will enable the country to regain prominence in agricultural production.

Albania-- Leaving Isolation Behind

Situated on the Adriatic coast and bordering Yugoslavia and Greece, Albania was the most isolated country in Europe and the last to relinquish communist rule. It is now attempting to become a democracy with a market-oriented economy. But 20 years of isolation will make reintegration into the community of European countries difficult.

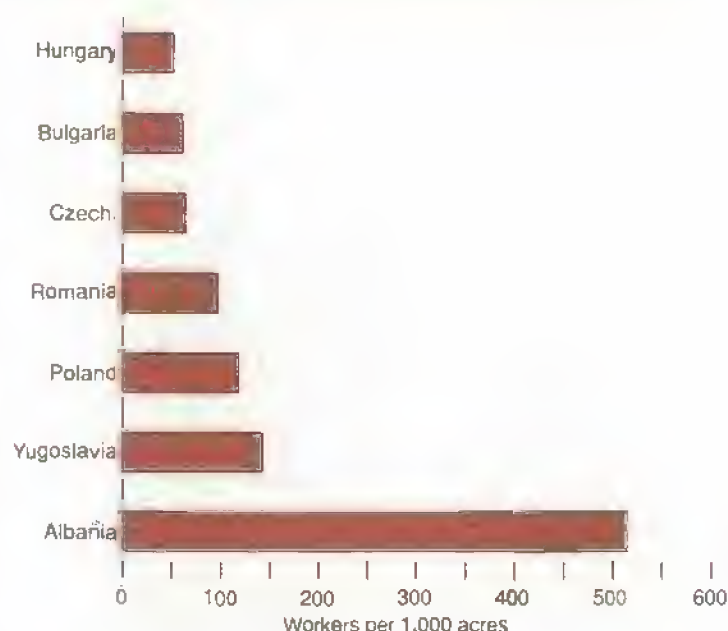
In fact, Albania's relatively high population growth of over 2 percent per year, and its large proportion of GNP in agriculture--33 percent in 1990--cast it as a less developed country rather than a developed, centrally planned economy. A relatively primitive industrial sector distinguishes Albania markedly from most of its CEE neighbors.

Enver Hoxha, Albania's Stalinist leader for 40 years, became Party First Secretary in 1944, and in 1946 proclaimed the country the People's Republic of Albania. With the help of Yugoslav communists, Albania became a tight-fisted Marxist-Leninist system modeled after the Soviet Union. Forced industrialization, political repression, and a one-party system followed. Throughout the next 44 years, Albania successively aligned itself with Yugoslavia, the Soviet Union, and the People's Republic of China.

By 1968, relations were effectively severed with the Warsaw Pact countries and China, and by 1970, Albania had retreated into self-imposed isolation. Not until after Hoxha's death in 1985 did relations with other countries begin to thaw. In the process, some political liberalization was permitted.

A railway established with Yugoslavia in 1986 (closed in 1988 following ethnic conflicts involving Albanians in Yugoslavia) brought broader contact with the "outside world." A movement toward political and economic freedom followed, culminating in March 1991 with the first free elections in over 40 years. The elected government is comprised of both communists and democrats. Albania has since reestablished ties with the U.S.

Albania Has More Farm Workers per Acre than Other CEE's



and other countries, and in June 1991 was admitted to the Conference on Security and Cooperation in Europe.

Neither the country nor the economy of Albania is large. Its population of 3.2 million is comparable to Connecticut's, although with about 6 million acres, Albania's area is about twice the size of Connecticut. The government does not report national income, but Albanian GDP in 1990 was estimated at \$3.8 billion. That translates into about \$1,200 per capita, making it the poorest country in Europe.

As in many centrally planned economies, growth in the industrial sector was emphasized over the last 40 years and focused primarily on the manufacture of machinery and other producer goods. However, the agricultural sector still employs nearly 60 percent of the labor force.

Both agriculture and industry were fully socialized under communist rule, with 74 percent of enterprises state-owned and the remaining 26 percent organized as cooperatives. Agriculture's share of national income declined significantly from 74 percent in 1950 to 39 percent in 1960. Since then, its share of national income declined further to just under 33 percent in 1989 when the industrial sector stood at 45 percent.

With 520 agricultural workers and less than eight tractors per 1,000 acres of land, Albanian agriculture is highly labor intensive. Nevertheless, Albania has enjoyed some agricultural successes. The number of animals has increased gradually in the last three decades. Cattle and milk cows have doubled from 1960 to 1989, while poultry nearly quadrupled from 1.6 million birds in 1960 to 5.6 million in 1989.

Cultivated land increased by more than 16 percent over the last two decades and yields rose for all crops, although yields are still among the lowest in Europe. Principal crops include wheat, corn, potatoes, sugarbeets, cotton, and tobacco. Average wheat yields in 1990 were 36.8 bushels per acre--comparable to U.S. yields but much lower than other European wheat yields which average from 50 to 75 bushels. Corn yields were under 60 bushels per acre in 1990--half the U.S. average.

Although Albania's balance of payments deficit is small relative to other CEE's--about \$92 million in 1989--the deficit has led to serious economic hardship. In 1989, imports consisted mainly of machinery and equipment (28 percent), minerals and metals (26 percent), nonfood raw agricultural materials (18 percent), and chemicals (12 percent).

In normal weather, Albania is self-sufficient in food production. In recent years, however, drought in southern Europe has forced Albania to import food for its own population. With a shortage of hard currency, Albania is currently unable to import enough food to maintain previous consumption levels. The current food shortage, due both to weather and structural adjustments with reform, has led Albania to seek help from the international community, and the EC has provided grain shipments.

Albania specializes in the export of energy, minerals, and metals. Of chief importance is the export of chromium, copper, and nickel, as well as the sale of hydroelectric power to Yugoslavia and Greece. Other important exports are food and other agricultural products, but there has been little excess for export in the last 5 years.

Socialization of property was extensive in Albania immediately after World War II. To date, some privatization and foreign joint ventures are still being discussed, while a land repatriation bill was passed in early 1991. One major area to be addressed involves safety and environmental conditions in both the industrial and agricultural sectors of the economy. As these problems are tackled, joint ventures and economic aid may be offered to Albania.

1992 Outlook Uncertain In the Balkans

Economic and political turmoil in the Balkan economies adds considerable uncertainty to the agricultural outlook for 1992 in these countries. For Bulgarian agriculture, stability in supply and demand is likely to return gradually, following the imbalances of 1991. Assuming normal weather and stable policy, production is expected to fall more into line with the recent declines in demand. This should help stabilize most commodity prices and shrink exportable surpluses.

But the outlook for Romanian agriculture in 1992 looks no brighter than 1991's performance. Decreasing consumer demand from higher prices and declining incomes is partially masking more severe food shortages. Unless significant gains are made from policies designed to restore economic stability, especially in controlling inflation, imbalances in agricultural output and input marketing will continue to result in shrinking supplies of food delivered to retail channels.

Although Romania appears to have sufficient food stocks on hand, it is appealing for food aid. This appeal is partly due to producer reluctance to sell to state procurement agencies, and subsequent stockpiling by producers. Producers' reluctance to sell their output stems from dissatisfaction with current prices and uncertainty about future inflation.

Other problems affecting food availability in Romania include a breakdown in input markets and farmer uncertainty over ownership and control of the land. Because Romanian land privatization has proceeded quickly and haphazardly, crop production has been disrupted. Severe restrictions on farmers' crop choice, and on the sale of land, are still enforced in Romania.

Yugoslavia's outlook for 1992 is clouded by the civil unrest that continues to plague the country. Farmers in key producing regions are uncertain that their output can be delivered to domestic or foreign markets. Inter-republic border trade faces rising nontariff trade barriers.

Meanwhile, the future for Albanian agriculture in 1992 is contingent on effective economy-wide market reforms and clarification of land ownership rights. Although Albania's land reform has been successful in distributing cooperative (though not state) lands to peasant farmers, the lack of available inputs and the rapid pace of change have left many farmers confused. Many of them view themselves as unemployed, rather than as new landowners. State farms and food aid from the U.S. and EC will be relied upon to meet domestic food demand and forestall further social discord. [Jason Lamb and Danielle Sremac (202) 219-0621] AO

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Economic and Agricultural Profile

Selected Economic Development Indicators, Recent Estimates

	Population	Life expectancy	Meat output	Automobiles registered	Energy consumed	Telephones
	<i>Million</i>	<i>Years</i>	<i>Lbs per capita</i>	<i>Units per 1,000¹</i>	<i>Bbls oil per capita</i>	<i>Units per 100²</i>
Bulgaria	8.9	71	154	122	29	25
Czechoslovakia	15.6	72	264	175	37	25
Hungary	10.4	69	352	157	22	17
Poland	38.1	70	176	106	25	10
Romania	23.2	70	154	11	23	10
Yugoslavia	23.7	72	110	130	16	7
U.S.	248.8	76	259	571	57	65

¹ Per 1,000 persons. ² Per 100 persons.

Data for Albania not available.

Gross National Product, 1985-91

	1985	1986	1987	1988	1989	1990	1991
	<i>\$ billion (1989)</i>						
Bulgaria	48.9	51.2	50.6	50.9	50.8	43.2	38.5
Czechoslovakia	116.0	118.4	119.7	121.8	123.1	117.9	111.8
Hungary	62.3	63.7	64.1	65.3	64.5	61.1	59.6
Poland	171.2	176.0	172.3	175.1	172.4	150.1	144.3
Romania	104.6	108.3	107.3	109.0	105.7	94.1	89.4
Yugoslavia	126.7	131.6	130.8	130.9	129.5	120.4	101.6
U.S.	4,513.3	4,651.8	4,830.0	5,048.0	5,198.4	5,306.6	—

Data for Albania not available.

Key Agricultural Data, Recent Estimates

	Total land area	Arable land	Farm labor force*	Tractors per 1,000 workers*	Workers per 1,000 acres
	<i>Mil. acres</i>	<i>—Percent—</i>			
Albania	6.8	21	60.0	15	520
Bulgaria	27.3	34	20.0	97	62
Czechoslovakia	31.0	40	12.3	164	67
Hungary	22.8	54	18.7	75	53
Poland	75.2	46	27.0	260	119
Romania	58.7	43	28.0	69	101
Yugoslavia	63.1	28	22.0	425	143
U.S.	2,265.1	20	2.7	1,419	7

*Percent of total labor force that is engaged in agriculture.

Supply and Use of Selected Commodities, 1986-91

Wheat

	Area harvested	Yield	Production	Beginning stocks	Total imports	Total exports	Feed use	Nonfeed use	Total consumption	Ending stocks
	1,000 hectares	Tons/ hectare	1,000 tons							
Bulgaria										
1986	1,127	3.84	4,327	—	200	215	1,300	2,512	3,812	500
1987	1,085	3.82	4,149	500	400	300	1,700	2,649	4,349	400
1988	1,182	4.01	4,743	400	100	352	1,700	2,691	4,391	500
1989	1,138	4.75	5,402	500	50	450	1,800	3,252	5,052	450
1990	1,163	4.38	5,095	450	700	300	2,400	3,250	5,650	295
1991	1,200	4.42	5,300	295	300	300	1,500	3,600	5,100	495
Czechoslovakia										
1986	1,213	4.37	5,305	—	200	200	3,020	2,285	5,305	—
1987	1,217	5.06	6,154	—	200	300	3,000	3,054	6,054	—
1988	1,250	5.24	6,550	—	200	400	3,400	2,950	6,350	—
1989	1,241	5.12	6,356	—	200	300	3,000	3,256	6,256	—
1990	1,241	5.41	6,715	—	200	400	3,500	3,015	6,515	—
1991	1,250	5.20	6,500	—	200	350	3,250	3,100	6,350	—
Hungary										
1986	1,318	4.40	5,793	—	—	1,100	2,100	2,593	4,693	—
1987	1,301	4.42	5,748	—	—	1,050	2,100	2,585	4,685	13
1988	1,281	5.44	6,975	13	—	1,900	2,350	2,365	4,713	375
1989	1,242	5.24	6,509	375	—	1,450	2,300	2,600	4,900	534
1990	1,121	5.49	6,159	284	—	800	2,300	2,587	4,887	1,006
1991	1,150	5.13	5,900	1,006	—	2,000	2,000	2,000	4,000	906
Poland										
1986	2,025	3.70	7,502	21	2,300	—	4,151	5,102	9,253	570
1987	2,132	3.73	7,942	570	2,000	—	4,850	4,942	9,792	720
1988	2,179	3.48	7,582	720	2,000	—	4,100	5,500	9,600	702
1989	2,195	3.86	8,462	702	1,370	—	4,300	2,562	9,862	672
1990	2,281	3.96	9,026	672	350	250	3,800	5,500	9,300	498
1991	2,437	3.76	9,170	498	350	400	4,000	5,300	9,300	318
Romania										
1986	2,530	2.65	6,700	150	—	100	2,100	4,200	6,300	450
1987	2,400	2.50	6,000	450	—	50	2,000	4,250	6,250	150
1988	2,400	3.50	8,400	150	—	250	4,000	3,800	7,800	500
1989	2,350	3.32	7,800	500	—	300	2,000	5,500	7,500	500
1990	2,250	3.24	7,300	500	700	100	2,900	5,300	8,200	200
1991	2,200	2.41	5,300	200	500	—	2,200	3,750	5,950	50
Yugoslavia										
1986	1,346	3.55	4,776	524	701	—	700	4,700	5,400	601
1987	1,455	3.62	5,272	601	283	11	700	4,652	5,352	793
1988	1,506	4.18	6,300	793	12	685	930	4,470	5,400	1,020
1989	1,479	3.79	5,599	1,020	11	982	700	4,550	5,250	398
1990	1,495	4.25	6,359	398	50	500	1,100	4,600	5,700	607
1991	1,547	4.22	6,530	607	50	1,000	950	4,581	5,331	656
TOTAL/AV.										
1986	9,559	3.60	34,403	695	3,401	1,615	13,371	21,392	34,763	2,121
1987	9,590	3.68	35,265	2,121	2,883	1,711	14,350	22,132	36,482	2,076
1988	9,798	4.14	40,550	2,076	2,312	3,587	16,480	21,774	38,254	3,097
1989	9,645	4.16	40,128	3,097	1,631	3,432	14,100	21,720	38,820	2,304
1990	9,551	4.26	40,654	2,304	2,000	1,863	15,900	24,252	40,252	2,156
1991	9,784	3.96	38,700	2,606	1,400	4,050	13,900	22,331	36,231	2,455

— = Less than 500 tons.

Source: USDA, Economic Research Service.

Coarse Grains

	Area harvested	Yield	Production	Beginning stocks	Total imports	Total exports	Feed use	Nonfeed use	Total consumption	Ending stocks
	1,000 hectares	Tons/ hectare	-----1,000 tons-----							
Bulgaria										
1986	950	4.30	4,085	—	600	—	3,795	490	4,285	400
1987	851	3.57	3,036	400	896	—	3,211	821	4,032	300
1988	893	3.33	2,974	300	1,300	—	3,515	859	4,374	200
1989	980	4.16	4,080	200	125	—	3,565	640	4,205	200
1990	817	3.28	2,677	200	400	—	2,715	421	3,136	141
1991	992	3.79	3,757	141	100	—	2,820	937	3,757	241
Czechoslovakia										
1986	1,303	4.20	5,479	—	226	50	4,275	1,380	5,655	—
1987	1,322	4.24	5,607	—	243	50	4,390	1,410	5,800	—
1988	1,305	4.02	5,240	—	200	50	4,050	1,340	5,390	—
1989	1,233	4.53	5,588	—	150	50	4,598	1,090	5,688	—
1990	1,145	4.98	5,702	—	—	50	4,662	990	5,652	—
1991	1,240	4.42	5,480	—	—	50	4,420	1,010	5,430	—
Hungary										
1986	1,501	5.61	8,416	1,378	163	518	7,055	813	7,868	1,571
1987	1,483	5.61	8,313	1,571	487	394	7,220	854	8,074	1,903
1988	1,506	5.03	7,577	1,903	119	203	7,026	1,028	8,054	1,342
1989	1,506	5.58	8,401	1,342	155	170	6,696	1,239	7,935	1,793
1990	1,507	4.12	6,214	1,792	475	—	6,631	1,224	7,555	927
1991	1,594	5.37	8,553	927	100	600	7,240	754	7,994	986
Poland										
1986	6,213	2.82	17,534	685	736	27	13,419	4,654	18,073	855
1987	5,940	2.88	17,101	855	730	36	13,258	4,684	17,942	708
1988	6,259	2.70	16,922	708	1,096	50	13,590	4,468	18,058	618
1989	6,181	2.99	18,496	618	775	100	14,471	4,506	18,977	812
1990	6,236	3.04	18,988	812	25	100	14,720	4,460	19,180	545
1991	6,227	2.95	18,395	545	100	50	14,394	4,028	18,422	568
Romania										
1986	3,695	3.84	14,180	450	565	600	11,600	1,945	13,545	1,050
1987	3,582	3.48	12,470	1,050	130	130	12,035	1,335	13,370	150
1988	3,777	3.51	13,250	150	50	450	11,275	925	12,200	800
1989	3,725	3.40	12,654	800	1,125	—	12,028	1,251	13,279	1,300
1990	3,439	3.06	10,513	1,400	1,740	—	11,101	1,502	12,603	950
1991	3,593	3.21	11,520	800	890	—	11,150	1,660	12,810	550
Yugoslavia										
1986	2,834	4.79	13,569	1,584	148	1,573	9,045	1,941	10,986	2,742
1987	2,614	3.70	9,671	2,742	447	113	9,051	1,757	10,808	1,939
1988	2,668	3.24	8,646	1,939	112	200	8,254	1,536	9,790	707
1989	2,693	3.89	10,474	707	523	150	9,107	1,145	10,252	1,302
1990	2,637	2.91	7,663	1,302	511	—	6,970	1,701	8,671	805
1991	2,601	5.03	13,090	805	151	500	8,926	1,713	10,639	2,907
TOTAL/AV.										
1986	16,496	3.84	63,263	4,097	2,438	2,768	49,189	11,223	60,412	6,618
1987	15,792	3.56	56,198	6,618	2,933	723	49,165	10,861	60,026	5,000
1988	16,408	3.33	54,609	5,000	2,877	953	47,710	10,156	57,866	3,667
1989	16,318	3.66	59,693	3,667	2,853	470	50,465	9,871	60,336	5,407
1990	15,781	3.59	51,757	5,506	3,151	150	46,799	9,998	56,797	3,143
1991	16,247	3.98	60,795	3,218	1,341	1,209	48,950	10,102	59,052	5,252

— = Less than 500 tons.

Source: USDA, Economic Research Service.

Total Grains

	Area harvested	Yield	Production	Beginning stocks	Total imports	Total exports	Feed use	Nonfeed use	Total consumption	Ending stocks
	1,000 hectares	Tons/ hectare	1,000 tons							
Bulgaria										
1986	2,093	4.04	8,462	—	810	215	5,095	3,062	8,157	900
1987	1,952	3.71	7,235	900	1,306	300	4,911	3,530	8,441	700
1988	2,091	3.71	7,767	700	1,410	352	5,215	3,610	8,825	700
1989	2,134	4.47	9,532	700	195	450	5,365	3,962	9,327	650
1990	1,996	3.92	7,822	650	1,110	300	5,115	3,731	8,846	436
1991	2,208	4.12	9,107	436	410	300	4,320	4,597	8,917	736
Czechoslovakia										
1986	2,516	4.29	10,784	—	496	250	7,295	3,735	11,030	—
1987	2,539	4.63	11,761	—	513	350	7,390	4,534	11,924	—
1988	2,555	4.61	11,790	—	470	450	7,450	4,360	11,810	—
1989	2,474	4.83	11,944	—	420	350	7,598	4,416	12,014	—
1990	2,386	5.20	12,417	—	270	450	8,162	4,075	12,237	—
1991	2,490	4.81	11,980	—	270	400	7,670	4,180	11,850	—
Hungary										
1986	2,834	5.02	14,239	1,378	218	1,618	9,155	3,491	12,646	1,571
1987	2,799	5.03	14,091	1,571	542	1,444	9,320	3,524	12,844	1,916
1988	2,799	5.21	14,583	1,916	174	2,103	9,376	3,477	12,853	1,717
1989	2,760	5.41	14,932	1,717	210	1,620	8,996	3,916	12,912	2,327
1990	2,640	4.70	12,403	2,327	540	800	8,931	3,601	12,532	1,938
1991	2,756	5.26	14,483	1,938	170	2,600	9,240	2,854	12,094	1,897
Poland										
1986	8,238	3.04	25,036	713	3,126	27	17,570	9,846	27,416	1,432
1987	8,072	3.10	25,043	1,432	2,820	36	18,108	9,723	27,831	1,428
1988	8,438	2.90	24,504	1,428	3,161	50	17,690	10,033	27,723	1,320
1989	8,376	3.22	26,958	1,320	2,203	100	18,771	10,126	28,897	1,484
1990	8,517	3.29	28,014	1,484	420	350	18,520	10,005	28,525	1,043
1991	8,664	3.18	27,565	1,043	500	450	18,394	9,378	27,772	886
Romania										
1986	6,270	3.35	20,995	600	640	700	13,700	6,335	20,035	1,500
1987	6,029	3.08	18,570	1,500	200	180	14,035	5,755	19,790	300
1988	6,225	3.49	21,754	300	100	700	15,275	4,879	20,154	1,300
1989	6,124	3.35	20,498	1,300	1,175	300	14,028	6,845	20,873	1,800
1990	5,729	3.12	17,854	1,800	2,290	100	14,001	6,893	20,894	1,150
1991	5,531	2.89	16,859	1,150	1,440	—	13,350	5,499	18,849	600
Yugoslavia										
1986	4,189	4.39	18,374	2,120	869	1,573	9,745	6,681	16,426	3,364
1987	4,079	3.67	14,972	3,364	750	124	9,751	6,455	16,206	2,756
1988	4,183	3.58	14,968	2,756	154	885	9,184	6,056	15,240	1,753
1989	4,178	3.85	16,089	1,753	564	1,132	9,807	5,745	15,552	1,722
1990	4,141	3.39	14,046	1,722	591	500	8,070	6,351	14,421	1,438
1991	4,154	4.73	19,639	1,438	231	1,500	9,876	6,344	16,220	3,588
TOTAL/AV.										
1986	26,140	3.74	97,890	4,811	6,159	4,383	62,560	33,150	95,710	8,767
1987	25,470	3.60	91,672	8,767	6,131	2,434	63,515	33,521	97,036	7,100
1988	26,291	3.63	95,366	7,100	5,469	4,540	64,190	32,415	96,605	6,790
1989	26,046	3.84	99,953	6,790	4,767	3,952	64,565	35,010	99,575	7,983
1990	25,409	3.64	92,556	7,481	5,421	2,500	62,799	34,656	97,455	6,005
1991	26,103	3.82	99,633	6,005	3,021	5,250	62,850	32,852	95,702	7,707

— = Less than 500 tons.

Source: USDA, Economic Research Service.

Beef and Veal

	Slaughter	Production	Beginning stocks	Total imports	Total exports	Total consumption	Ending stocks
	1,000 head	1,000 tons					
Bulgaria							
1986	590	163	15	—	3	165	10
1987	516	132	10	—	12	120	10
1988	514	131	10	—	12	119	10
1989	648	136	10	—	8	133	5
1990	618	137	5	—	6	131	5
1991	565	126	5	—	6	120	5
Czechoslovakia							
1986	1,572	457	5	10	55	412	5
1987	1,519	458	5	10	45	423	5
1988	1,651	451	5	10	40	421	5
1989	1,601	488	5	20	50	458	5
1990	1,607	454	5	10	50	414	5
1991	1,420	391	5	4	50	345	5
Hungary							
1986	372	112	17	3	39	80	13
1987	379	114	13	13	44	85	11
1988	343	93	11	18	37	76	9
1989	389	108	9	15	47	78	7
1990	410	110	7	4	35	71	15
1991	411	111	15	5	39	69	23
Poland							
1986	4,322	854	84	12	49	818	73
1987	4,047	835	73	—	53	805	50
1988	3,511	783	50	44	55	810	12
1989	3,355	729	12	90	48	782	1
1990	4,376	799	1	2	43	758	1
1991	3,393	726	1	49	55	716	5
Romania							
1986	1,350	195	25	—	100	100	20
1987	1,543	240	20	—	115	125	20
1988	1,547	230	20	—	120	115	15
1989	1,413	210	15	—	100	115	10
1990	1,298	212	10	100	—	302	20
1991	1,360	230	20	60	—	310	—
Yugoslavia							
1986	2,173	317	43	30	30	305	55
1987	2,148	317	55	41	25	305	83
1988	2,207	301	83	53	32	325	80
1989	2,167	309	80	60	28	322	99
1990	2,212	302	99	55	24	338	94
1991	2,090	301	94	50	28	338	79
TOTAL							
1986	10,379	2,098	189	45	276	1,880	176
1987	10,152	2,096	176	64	294	1,863	179
1988	9,773	1,989	179	125	296	1,866	131
1989	9,573	1,980	131	185	281	1,888	127
1990	10,541	2,014	127	171	276	2,014	140
1991	9,239	1,885	140	168	178	1,898	117

— = Less than 500 tons.

Source: USDA, Economic Research Service.

Pork

	Slaughter	Production	Beginning stocks	Total imports	Total exports	Total consumption	Ending stocks
	1,000 head			1,000 tons			
Bulgaria							
1986	4,870	434	—	—	10	414	10
1987	5,945	416	10	—	4	412	10
1988	5,777	404	10	—	5	399	10
1989	5,416	424	10	—	5	419	10
1990	5,978	422	10	—	5	417	10
1991	5,870	400	10	—	5	395	10
Czechoslovakia							
1986	8,316	859	5	5	30	834	5
1987	8,122	843	5	5	25	823	5
1988	8,986	938	5	5	35	908	5
1989	9,100	960	5	5	40	925	5
1990	9,225	942	5	5	40	907	5
1991	8,660	894	5	—	40	834	25
Hungary							
1986	10,295	962	5	—	133	829	5
1987	11,381	1,064	5	—	123	938	8
1988	10,549	986	8	—	133	851	10
1989	11,546	1,079	10	—	135	937	17
1990	10,207	970	17	—	210	734	43
1991	9,930	893	43	—	200	706	30
Poland							
1986	19,116	1,749	6	12	73	1,676	165
1987	19,145	1,745	165	14	75	1,724	125
1988	20,056	1,845	125	6	76	1,776	124
1989	20,134	1,870	124	20	73	1,805	136
1990	19,097	1,814	136	20	59	1,842	69
1991	20,086	1,910	69	20	70	1,850	79
Romania							
1986	14,000	840	20	—	135	700	25
1987	14,176	900	25	—	150	750	25
1988	14,744	840	25	—	140	710	15
1989	12,191	600	15	—	180	410	25
1990	9,759	620	25	150	5	760	30
1991	9,800	600	30	30	10	620	30
Yugoslavia							
1986	12,448	795	136	27	21	783	154
1987	13,845	871	154	14	27	835	177
1988	14,156	819	177	42	24	862	152
1989	13,758	791	152	43	20	795	171
1990	13,630	771	171	60	15	822	165
1991	13,650	785	165	40	18	834	138
TOTAL							
1986	69,045	5,639	172	44	402	5,236	364
1987	72,614	5,839	364	30	404	5,482	350
1988	74,268	5,832	350	53	413	5,506	316
1989	72,145	5,724	316	68	453	5,291	364
1990	67,111	5,579	364	235	170	5,482	258
1991	67,996	5,482	322	90	343	5,239	312

— = Less than 500 tons.

Source: USDA, Economic Research Service.

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